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Beck et al.

[11] **3,900,278**

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[54] **APPARATUS FOR MOLDING LAMP SOCKETS ONTO PAIRED INSULATED CONDUCTORS**

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[21] Appl. No.: **404,778**

Related U.S. Application Data

[62] Division of Ser. No. 857,452, Sept. 12, 1969.

[52] **U.S. Cl.** **425/123**; 425/126; 425/129; 425/137

[51] **Int. Cl.** **B29c 6/04**

[58] **Field of Search** ..... 425/123, 122, 129, 126, 425/117, DIG. 201, 112, 110, 111, 116, 136, 137, 169; 29/208 F, 25.13, 25.19

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Primary Examiner—Robert D. Baldwin

[57] **ABSTRACT**

Electrical lamp sockets are moulded on and around elongated mutually insulated conductors to which the socket contacts are connected before moulding; the contacts being firmly embedded in the socket material. A transfer turntable carries a plurality of supports for mounting the socket contacts in spaced relation thereon; each support being successively brought to a moulding station and co-operating with mould elements to form a mould for the socket. The conductors are entrained through the moulding station and impaled on points of the contacts at said station prior to fully closing the mould and injecting the moulding charge.

5 Claims, 10 Drawing Figures

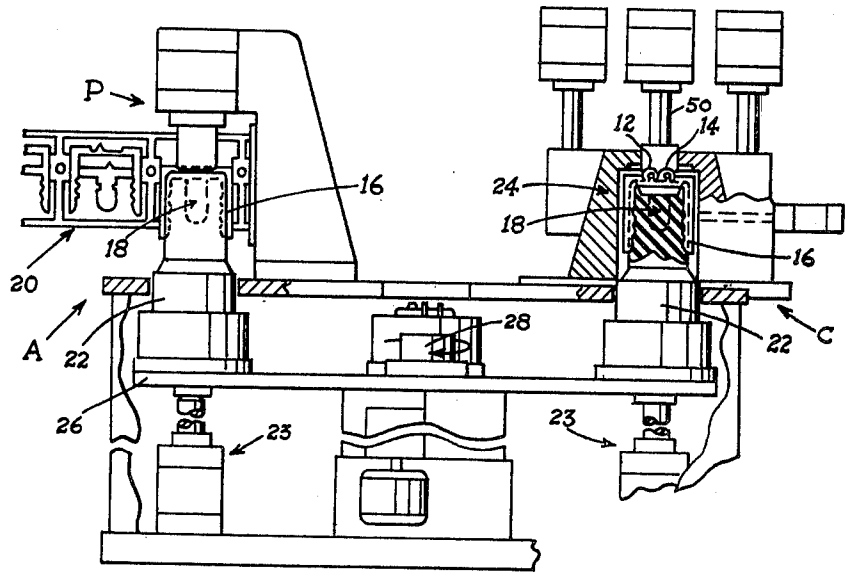


Fig. 1.

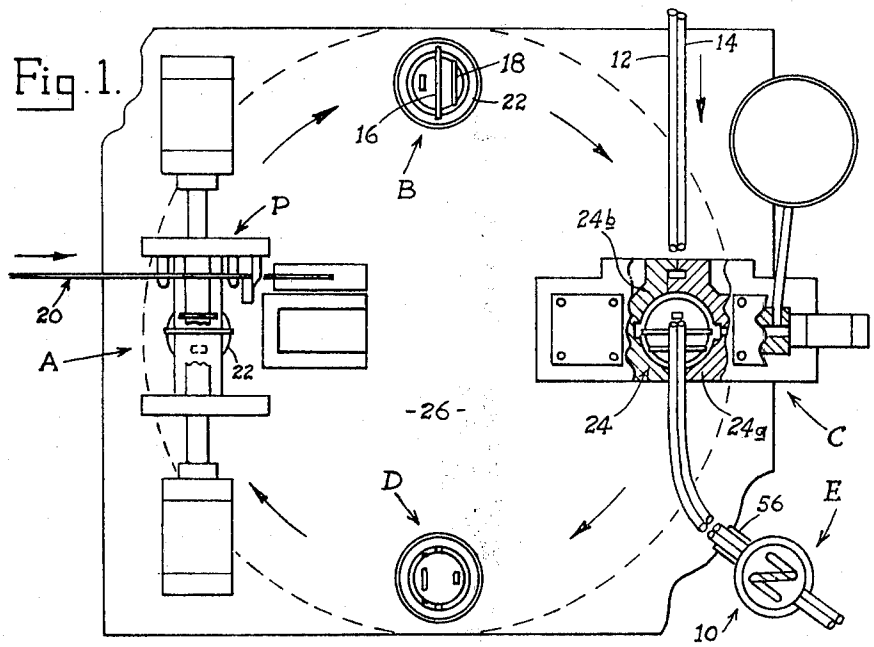

18
22
16
B
12
14
P
24b
20
A
22
-26-
24
24a
C
D
56
E
10

Fig. 2.

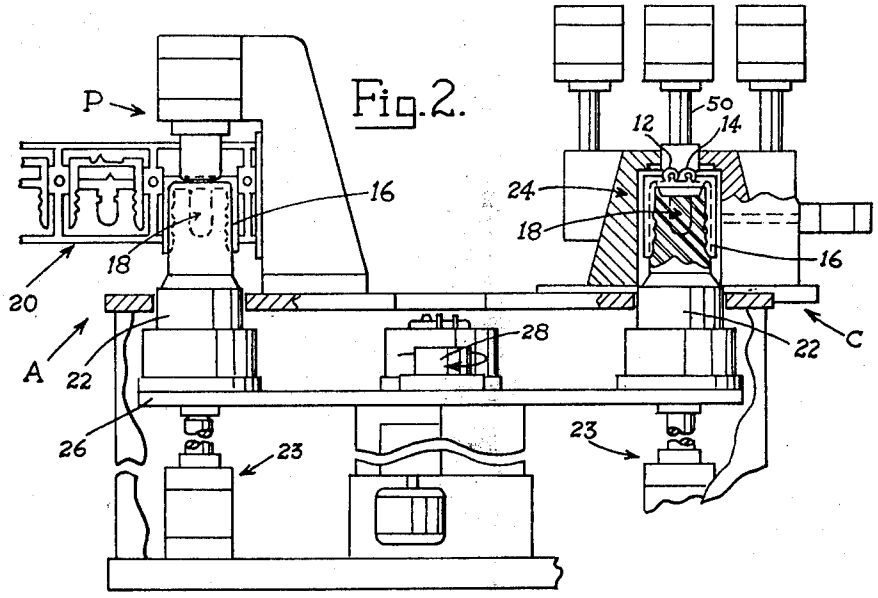

P
16
18
20
A
22
26
23
28
50
12
14
24
18
16
22
C
23

Fig. 3.

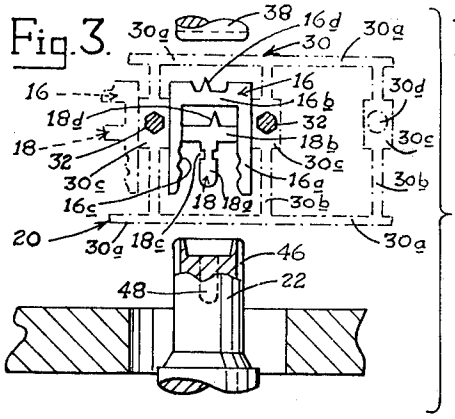


Fig. 4.

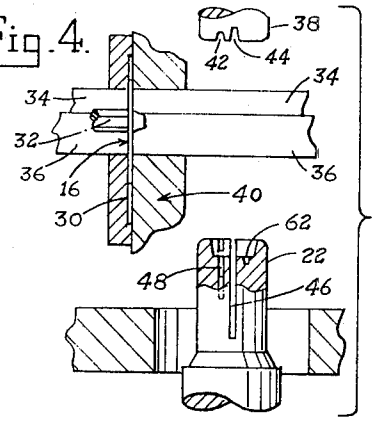


Fig. 5.

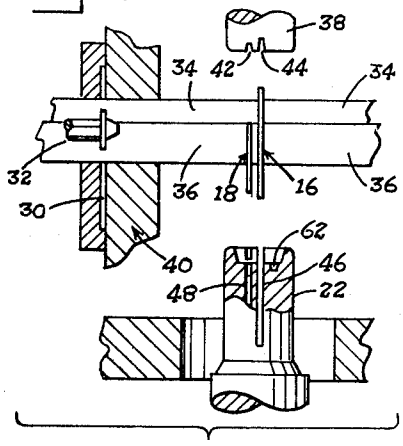


Fig. 6.

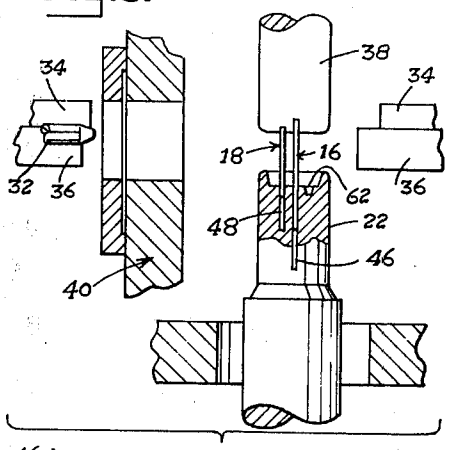


Fig. 7.

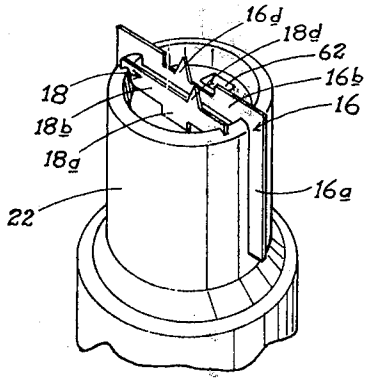


Fig.8.

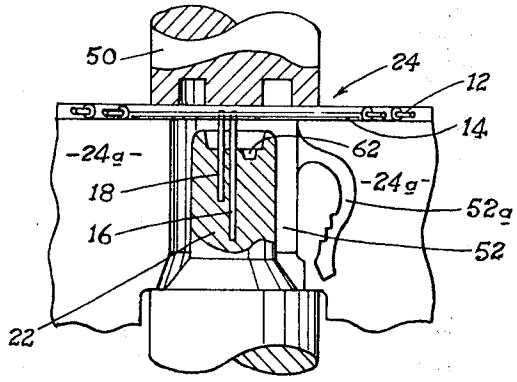


Fig.9.

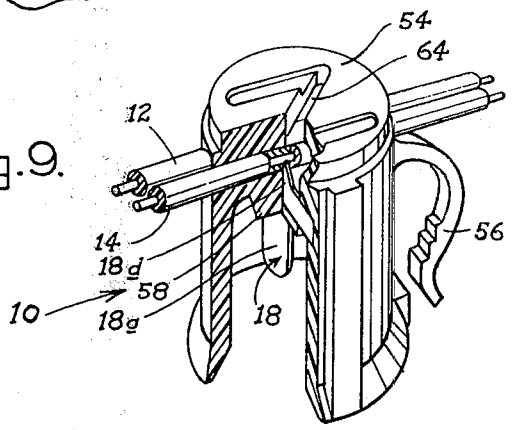
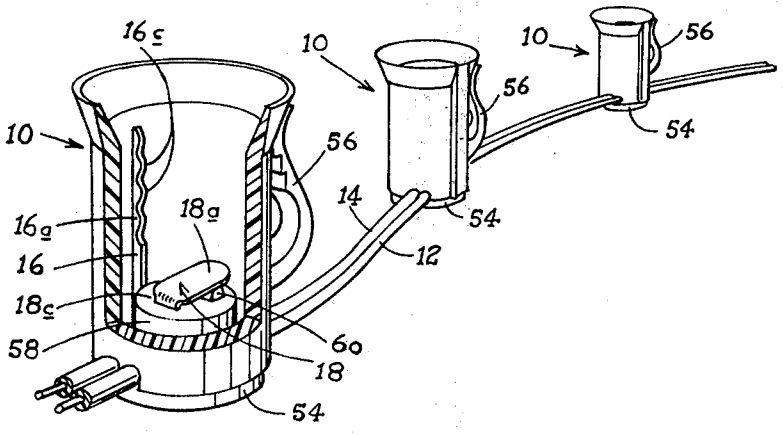


Fig.10.



APPARATUS FOR MOLDING LAMP SOCKETS ONTO PAIRED INSULATED CONDUCTORS

This invention is a division of our co-pending U.S. application Ser. No. 857,452 filed Sept. 12, 1969 and relates to apparatus for the manufacture of an electrical socket moulded on and around a pair of electrical conductors for supplying electrical energy to the contact elements in the socket.

It is known from the prior art to mould an electrical lamp socket onto a pair of electrical conductors and, after the moulding stage, to insert a pair of electrical contact elements into the socket to make electrical connection with the respective conductors; the said contact elements being engageable by an electrical device, such as, for example, a light bulb, when such device is located within the socket.

It is an object of the invention to provide a process for the moulding of an electrical socket onto a pair of electrical conductors wherein electrical contacts, intended for subsequent electrical contact with a co-operating electric device such as a light bulb inserted in the socket, are installed in the socket in electrical connection with the respective said electrical conductors in the course of the moulding of the socket.

It is a further object of the invention to provide such a process wherein said pair of contacts are supported in predetermined. spaced-apart relation prior to and during the effecting of electrical connection with said conductors and are retained in said relation during the moulding of said socket.

It is a further object to provide such a process wherein the socket is moulded to co-operate with said contacts and maintain them firmly in electrical connection with their respective conductors.

It is a still further object to provide such a process wherein said contacts are retained within the socket against displacement relative to the respective electrical conductors with which they are in electrical connection.

It is a yet further object to provide an improved method of forming electric contacts as aforesaid for installation in the socket during the moulding thereof.

In accordance with the invention, there is provided a method of moulding an electrical socket onto a pair of electrical conductors including the steps of effecting electrical connection between a pair of conductors and a pair of contacts and moulding a socket casing around said contacts in spaced-apart relation whilst connected to said conductors as aforesaid.

Further objects of the invention, more or less broad than the foregoing, will become apparent from the following description of the constituent parts, elements and principles of one embodiment of the invention given herein solely by way of example with reference to the accompanying drawings, wherein:

FIG. 1 is a top plan mainly diagrammatic view of apparatus for carrying out the invention illustrating four work stations spaced circumferentialy around a transfer turntable;

FIG. 2 is a mainly diagrammatic side elevation of the apparatus shown in FIG. 1 showing two of the work stations together with associated work supporting posts carried by the turntable;

FIGS. 3 to 6 are side cross-sectional views of separating apparatus employed at the first work station and

showing the sequence of operations for mounting two contact elements upon a support post;

FIG. 7 is a top perspective view of a support post with the two contact elements mounted thereon;

FIG. 8 is a side cross-sectional view of a moulding cavity employed at the third work station for moulding an electric socket about the contact elements and conductors;

FIG. 9 is a top part cut-away perspective view of a socket on the conductors after moulding at the third work station, and

FIG. 10 is a part cut-away perspective view of a plurality of moulded sockets in their finally moulded form as they leave the fourth work station.

The invention broadly contemplates the provision of method and apparatus for the moulding of an electrical socket **10** on and about a pair of mutually insulated conductive wires **12** and **14** wherein a pair of electrical contact elements **16** and **18** are installed in electrical connection with respective ones of said conductive wires in the course of the moulding operation. To this end, the apparatus includes means for delivering a pair of mutually insulated wires to a moulding station, means at said station for supporting a pair of electric contact elements in spaced relation, means for bringing eacn of said contact elements into electrical connection with a respective wire and means for moulding a socket casing about said wires and contact elements.

The apparatus also includes other detailed features, which will be more fully described herein, and also includes means for forming the contact elements **16** and **18** from a ribbon of prestamped metal.

In the embodiment described and illustrated herein, the apparatus includes transfer mechanism indexed to move sequentially through a plurality of work stations at each of which an operation is carried out pursuant to the formation of the finished moulded socket. As illustrated herein, there is visualized a loading station A at which the paired contacts **16** and **18** are separated from a connected series **20** of such elements and they are then located in spaced-apart relation upon post-like support **22** for transport to a moulding position. En route thereto, the support **22** carrying the contacts **16** and **18** passes a second station B at which it is sensed to verify the presence and positioning of the contacts **16** and **18.** At the next station C, which is the moulding station, the support **22** bearing contacts **16** and **18** is assembled with other parts to form a mould **24** in which the socket **10** is moulded about the contacts and electrical conductors after they have been brought into electrical connection with each other, such connection conveniently being effected at this third station C. Upon completion of the moulding operation, mould **24** is re-opened, freeing the completed socket **10** for transport to a location at which it is subjected to an electrical test; the support **22** returning meanwhile to station A via a fourth station D at which it is sensed to verify that it is duly cleared for reloading with a second pair of contacts **16–18** at said loading station A.

The support **22** is located on and moved between said stations A, B. C and D by transfer mechanism comprising, in this instance, a generally circular turntable **26** mounted for rotation in a horizontal plane and in 90° steps about a central vertical axis **28**; each said step representing one of the four work stations referred to above. It will, of course, be understood that four identical supports **22** are provided at circumferentially

spaced-apart positions on turntable **26**; each being sequentially and cyclically transported thereby through each of said work stations.

Each such support **22** is disposed peripherally of turntable **26** and projects perpendicularly from the upper surface thereof for axial movement relative thereto. Each said post **22** is suitably recessed at its projecting end for receiving the aforesaid side and centre contact elements **16** and **18** respectively thereon as will be further described whilst the other end of each post **22** disposed below the turntable **26,** is associated with driving means, such as fluid pressure motors **23,** for procuring axial movement of the post **22** as aforesaid.

For the purpose of clarity, it is now deemed convenient to describe the full sequence of operations leading to the formation of the finally moulded socket **10** with the electrical contact elements **16** and **18** installed therein starting from the first work station A at which the contact elements are separated out of a connected series **20** of such elements as follows.

The paired contact elements **16** and **18** in this embodiment are formed serially in a pre-stamped ribbon **20** of electrically conductive, and at least slightly resilient, material such as brass to provide respective side and centre contacts for the socket for electrical engagement by a screw cap and centre pole respectively of an electrical device such as, for example, an electric lamp installable in said socket **10.**

Said pre-stamped ribbon **20** is comprised of a series of interconnected assemblies of joined together contact elements **16** and **18.** In this example, the side contact element **16** is generally U-shaped and specifically comprises two parallel limbs **16***a*—**16***a* integrally interconnected together in spaced relation by a bridging member **16***b*. The centre contact element **18** is of generally T-shaped form having a stem **18***a* extending from a transverse head **18***b* which, in ribbon **20,** also links the parallel limbs **16***a*—**16***a* of the side contact element **16.**

Optionally, in the ribbon **20,** each said assembly of contact elements **16–18** is contained in a frame **30** comprised of strips **30***a*—**30***a* included in the lateral edges of ribbon **20** which are joined between adjacent contact assemblies by a third strip, the divider **30***b* having an intermediate enlargement **30***c* with a centre hole **30***d* which, in the ribbon **20,** joins the limb **16***a* of one side contact element **16** to the proximal limb **16***a* in the neighbouring contact assembly as best shown in FIGS. **2** and **3.**

The U-shaped side contact **16** is further formed with serrations or teeth **16***c* along the mutually facing edges of its limbs **16***a* whilst the bridge **16***b* thereof is provided on its exterior edge with a triangular point **16***d*. The T-shaped centre contact **18** is also provided with a triangular point **18** on its head **18***b* extending in the opposite direction to the stem **18***a* thereof whilst the stem itself is necked at **18***c* intermediate its ends as shown; the purpose of these features becoming apparent from the hereinafter following description.

As stated above, means, such as a press P located at the first work station A, is provided for separating the side and centte contact elements centre and **18** respectively from the ribbon **20** and for locating the thus separated elements in suitably spaced-apart relation upon a support post **22** of the transfer turntable **26.**

The means at said work station A for separating and locating the contact elements **16–18** as aforesaid is of fairly common design which does not constitute a significant part of the invention and hence need not be described in detail herein. Generally, however, it is comprised of means for releasably engaging the ribbon **20** at suitable intervals, and mechanism for actually severing the said contact elements **16–18** from the ribbon **20** and from each other.

Referring to FIGS. **1–3** of the drawings, it will be seen that the ribbon **20** is first fed to the engaging means aforesaid and supported thereon for transfer to the actual severing mechanism in a substantially horizontal direction but with the plane of the ribbon **20** substantially vertical. Furthermore, the ribbon **20** is so oriented that the aforesaid points **16***d* and **18***d* of the respective contacts **16** and **18** are disposed with their apices pointing upwardly of the ribbon **20.**

In the severing mechanism proper, the aforesaid two contacts **16** and **18** in each successive units of the ribbon **20** are pressed out of their connecting frame **30** and displaced laterally relative to one another for location upon a support post **22** of the turntable **26** at said station A. After such an operation, the post **22** with the contact elements **16** and **18** carried thereon is then advanced to the next work station B whilst the ribbon **20** is advanced one step through the separating apparatus to enable the next successive pair of contact elements to be mounted upon the post **22** which is next brought by turntable **26** to work station A.

As mentioned earlier, each unit in the continuous ribbon **20** is formed with a pair of holes **3***d* in a respective pair of plate elements **30***c* on the connecting frames **30** on either side of a said unit. These holes **30***d* are provided for location purposes to enable that unit of the ribbon **20** whose contacts are to be separated therefrom to be positioned relative to the severing mechanism proper prior to and during the actual separating operation. Such location may conveniently be carried out by a pair of retractable fingers **32—32** (see FIGS. **3–6**) associated with the separating apparatus and engageable within a corresponding pair of said holes **30***d*—**30***d* in that unit of the ribbon **20** for the purposes aforesaid.

In one preferred form, the severing mechanism includes two pairs of axially-opposed axially reciprocable punches **34** and **36**; each such pair of opposed punches being engageable respectively with the side and centre contact elements **16** and **18** in that unit of the ribbon **20** from which the said elements are to be separated.

Referring to FIGS. **4–6** of the drawings, it will be seen that the two pairs of punches **34** and **36** are mounted respectively one above the other; both being located above the upper end of the support post **22** at said work station a. The severing mechanism also includes a locating plunger **38** mounted for axially reciprocable vertical movement above the level of the two pairs of punches **34** and **36** and co-axially with the support post **22** at station A.

As stated hereinbefore, the continuous ribbon **20** is fed into the press P with the plane of the ribbon substantially vertical and the pointed elements with the apices of contact points **16***d* and **18***d* having their apices pointing upwardly of the ribbon **20.** Initially, the two pairs of punches **34** and **36** are separated to define a narrow gap between each punch **34—34** and **36—36** of a respective pair, with the two gaps being in linear alignment one with another. The ribbon **20** is then fed between these two aligned gaps and both pairs of punches **34** and **36** are actuated to grip the respective

contact elements **16** and **18**; the upper pair of punches **34** gripping the side contact **16** and the lower pair of punches **36** gripping the centre contact **18** (see FIG. 4).

It should be understood that, when the ribbon **20** is gripped between the two pairs of punches **34** and **36** at the position shown in FIG. **4**, the holes **30***d*—**30***d* in the plate elements **30***c*—**30***c* of the surrounding frame **30** of the said unit are positively located upon the aforesaid pins **32**—**32** of the separating mechanism. The two contacts **16** and **18** are then severed from the frame **30** either by moving that part of the mechanism **40** which contacts the frame relative to the contacts or, as illustrated herein, by reciprocating both pairs of punches **34** and **36** relative to the frame locating means **40.** After severing, the lower pair of punches **36** is then displaced longitudinally relative to the upper pair **34** so that the centre contact element **18** is displaced laterally of the side contact element **16** in such manner that the planes containing the two contact elements **16** and **18** are then located in a parallel offset orientation relative to one another with the plane of the side contact element **18** containing the longitudinal axis of the support post **22** therebelow (see FIG. **5**).

The aforesaid locating plunger **38** is formed with a plane end having two recesses **42** and **44** formed therein, the recess **44** being approximately twice as deep as the recess **42.** The deeper recess **44** is adapted to engage with the point **16***d* and bridge piece **16***b* of the side contact **16** whilst the shallower recess **42** is adapted to engage with the head **18***b* and point **18***d* of the centre contact element **18.** Initial downward actuation of this plunger **38** towards the punches **34** and **36** with concurrent longitudinal separation thereof enables said plunger **38** to positively engage the contact elements **16** and **18** whilst further downward movement of the plunger **38** will press the separated and laterally offset contacts downward towards the associated support post **22.**

Each support post **22** itself is a substantially cylindrical member with a plane outer surface end two diametrically-opposed shallow slots **46** in its outer surface to receive the limbs **16***a* of the side contact **16** and with an elongated slot **48** extending axially from its end surface to receive the centre contact stem **18***a*. Axially upward movement of that support post **22** located at work station A relative to the turntable **26** concurrent with the downward movement of the locating plunger **38** enables the two contacts **16** and **18** to be mounted upon the support post **22** with the limbs **16***a*—**16***a* of the side contact element **16** engaged within said shallow slots **46**—**46** of the support post **22** and the centre contact **18** engaged within the elongated slot **48** as shown in FIG. **6.** Both the locating plunger **38** and the support post **22** are then retracted relative to one another and the turntable **26** is indexed to move through 90° bringing the support post **22** with the contacts **16** and **18** mounted thereon to the next work station B whilst freeing the separating mechanism proper at the first work station A preliminary to the next cycle of operations, i.e.: separating a further pair of contacts from the ribbon **20** and mounting them upon a next succeeding support post **22.**

As mentioned hereinbefore, the second work station B includes means for sensing and confirming the presence, or absence, of each of the contacts **16** and **18** upon the support post **22** of the turntable **26.** Such sensing operation may conveniently be carried out by a photoelectric detector or, alternatively, by establishing a closed electrical circuit through the said contact elements **16** and **18** in a known manner. If the sensing operation confirms the presence of both contact elements, the turntable **26** is then allowed to move the post **22** and contacts **16** and **18** mounted thereon to the third work station C. Alternatively, if for some reason one or both of the contacts prove absent from the post **22,** this may be signalled and an appropriate action initiated such as, for example, the prevention of further advancement of the turntable **26** pending manual mounting of the missing contact element or elements upon the support post **22** or passing a signal to the third work station C to render it inoperative pending the arrival at said station of a correctly loaded support post **22.**

The third work station C is that at which the socket **10** is moulded on and around a pair of mutually insulated conductors **12** and **14** in which the contacts **16** and **18** are installed in electrical connection respectively with a said conductor.

The socket mould **24** is comprised of conventionally separable mould halves **24***a*–**24***b* located at station C; a support **22** which is elevatable in turntable **26** to fit as a core between the assembled mould halves **24***a*–**24***b*, and a plunger **50** which is movable downwardly to engage said assembled mould halves and seal the resultant cavity **52,** the plunger **50** being co-axial with support **22**; all as will appear from a study of FIGS. **1, 2** and **8** of the drawing.

It need hardly be stated that the above enumerated parts are suitably actuated to assemble in the manner described to form mould **24** each time a support **22** reaches station C and to disassemble after a suitable interval to release the socket **10** moulded in said mould **24.**

The invention also includes means for training the aforesaid paired and mutually insulated wires **12** and **14** more or less diametrically across the top of the mould halves **24***a*–**24***b* through suitable channels formed therein below plunger **50** so that, when the mould halves **24***a*–**24***b* are closed together, the support post **22** carrying the contacts **16** and **18** is moved upwardly and the plunger **50** moved downwardly, the said mutually insulated wires **12** and **14** will be clamped between the support **22** and plunger **50** at a location corresponding, in the finally moulded form of the socket **10,** to the base **54** thereof (see FIGS. **8**–**10**).

The initial relative movement towards one another of the support post **22** and the plunger **50** presses the conductive wires **12** and **14** onto the points **16***d* and **18***d* of the respective contacts **16** and **18** causing them to penetrate the insulated covering of the wires **12** and **14** and make electrical connection with the conductive cores thereof. It will, of course, be understood that the wires **12** and **14** are led through the moulding station C so oriented (see FIGS. **1, 2** and **8**) as to be respectively engageable by the pointed elements **16***d* and **18***d* of the respective contacts **16** and **18** carried by the support post **22.**

Referring to the drawings, it will be observed that the two mould halves **24***a*–**24***b* close laterally together about the electric conductors **12** and **14** which pass diametrically through the mould; the joint line of the mould thereby being parallel to the line of the conductors. The mould halves **24***a*–**24***b* may be further formed to define a cavity **52***a* for moulding a clip **56** integrally

with the socket **10**; the joint line of the mould halves also passing centrally through the clip moulding cavity **52***a* so that, in the finally moulded form of the socket **10**, the clip **56** will project from the socket casing in a plane parallel to the line of the conductors **12** and **14** (see FIGS. **1**, **9** and **10**).

Thus, when all the respective parts of the mould **24** are closed together, the respective contacts **16** and **18** are brought into electrical connection with the respective conductors **12** and **14** and a charge of moulding material is injected into the mould cavity. Such moulding material conveniently comprises a suitable plastic such as, for example, polypropylene which flows into the mould cavity **52** defined by the mould halves **24***a*–**24***b*, the support post **22** and plunger **50** so as to completely surround both the bridge piece **16***b* of the side contact **16** and the head **18***b* of the centre contact **18** of the socket.

After the moulding material has cured, the support post **22** and plunger **50** are retracted, the respective parts of the mould **24** are opened, and the turntable **26** is advanced to bring the moulded socket **10** with its conductive wires **12** and **14** moulded therein to the check station E (FIG. **1**) for electrical testing at which time a next following socket may then be moulded at the preceding work station C upon the conductive wires **12** and **14** whereby a series of spaced-apart sockets may be moulded upon the wires and connected thereto in electrical parallelism as indicated in FIGS. **1** and **10**.

While said station E is utilized primarily for carrying out an electrical test upon the moulded socket **10** to verify that correct electrical connection has been established between the contacts **16** and **18** and the respective electrical conductors **12** and **14**, a final forming operation may also be completed at this point. It will be appreciated, that immediately following moulding of socket **10**, its centre contact **18** will project axially from base **56** as shown in FIG. **9** and it is hence necessary, at this station E, to bend the said centre contact **18** at its necked portion **18***c* to lay it closely parallel to the base **54** of the socket so as to be engageable by the pole of, for example, an electric light bulb.

While the final forming operation aforesaid is being carried out and the electrical connections being verified, the moulded socket **10** having been removed from the support post **22** of the turntable at station C, the said post **22** is then advanced to station D for a clearance check and thereafter on to the aforesaid first work station A to receive another pair of contacts preliminary to the reinstitution of the whole cycle of operations aforesaid.

Referring now to FIGS. **9** and **10** of the drawings which show the moulded socket **10** mounted upon the paired wires **12** and **14**, it will be observed that, whereas the exterior surface of the base **54** of the socket casing is relatively plane, the interior surface comprises an upstanding central circular boss **58**. Such boss **58** is, of course, formed during the moulding operation at the third work station C and the shape thereof is determined by the mutual co-operation between the upper surface of the support post **22** and the laterally closeable mould halves **24***a*–**24***b* (see FIGS. **3**–**8**). It will also be noted that there is provided a small moulded support bridge or platform **60** adjacent one side of the boss, such platform **60** being moulded by means of a suitable moulding recess **62** formed in the upper surface of the turntable support post **22**. It will be appreciated that, since the centre contact **18** is relatively resilient to accommodate good electrical connection with the centre pole of a screw-capped electrical element as aforesaid, the stem **18***a* of the centre contact, bent over about its necked portion **18***c* at the fourth work station E is propped in slightly elevated position by said platform **60** and hence prevented from being depressed too far towards the base **54** of the socket **10**.

It will also be noted (see FIG. **9**) that the exterior surface of socket base **54** has diametrically-extending slot **64** moulded therein by said axially movable plunger **50** which co-operates with the support post **22** to effect the electrical connection between the contacts **16** and **18** and the respective conductive wires **12** and **14**. Such slot **64** corresponds to the shape of the undersurface of the aforesaid plunger **50** (see FIG. **8**) whereby firm pressure may be applied and maintained during the moulding operation between the plunger **50**, the conductors **12**–**14** and the contacts **16**–**18** on support post **22**.

Thus, there has been provided a method of moulding an integral electric socket **10** on and about a pair of mutually insulated conductive wires **12** and **14** and including two contacts **16** and **18** engageable by, for example, an electric light bulb, and wherein said contacts are actually installed in the socket during the moulding operation in electrical connection with the respective wires and are firmly retained against displacement relative to said wires and the socket. As will be appreciated, such method of moulding has included the feature of retaining the contacts **16**–**18** in spaced-apart relation, and in electrical connection with their respective conductors **12**–**14**, during the actual injection of moulding material into the mould cavity whereby the socket casing may be produced accurately and simply. At the same time the feature of firm embedment of the contacts **16**–**18** within the socket material is facilitated, as hereinbefore described, by flowing the moulding material within mould **24** around both the bridge piece **16***b* of contact **16** and head **18***b* of contact **18**. Such parts **16***b* and **18***b* thus function in the manner of keying formations on their respective contacts **16** and **18** to positively retain said contacts against displacement in the moulded socket after it has set.

In the present embodiment, the contacts are shown as suitable for engagement by the centre pole and screw cap respectively of a screw-capped electric element such as an electric light bulb but it should be appreciated that other suitable forms of contact may be provided if desired; further details of the socket itself being more fully described in our co-pending U.S. Application Ser. No. 824,816 filed on May 15, 1969 now Pat. No. 3,597,725.

Whilst the foregoing embodiment has been described with reference to the moulding of one socket casing at a moulding station, it will be apparent to those skilled in the art that, by suitable modification, it would be possible to mould more than one socket at the moulding station whereby an increased rate of output and economy in production may be effected.

What we claim is:

1. Apparatus for molding lamp sockets onto paired insulated conductors comprising:

a core movable between a loading station and a molding station, said core member having slots for receiving and maintaining a pair of pointed electri-

cal contacts in spaced relation with their points exposed for penetration into respective conductors to establish electrical connection therewith and with their margins extending from said core member for embedment in molding material;

means at said loading station for locating said contacts in said slots as aforesaid;

mold sections at said molding station movable between a closed position in which they surround said core member, cooperating with it to form a mold cavity of annular configuration for receiving molding material, and an open position in which said mold sections are separated from each other and from said core member enabling release of the molded socket and removal of the core member;

a plunger disengageably engageable with said mold sections in their closed position aforesaid to seal the resultant mold cavity with said paired conductors captured therein and with said plunger applying pressure to said paired conductors to assist, at least, and to maintain penetration of said contact points into respective conductors to establish electrical connection therewith, and

means for injecting molding material into said cavity while the plunger maintains pressure on said conductors as aforesaid.

2. Apparatus as defined in claim **1** including;

a turntable mounting said core member for transporting it sequentially and cyclically between said loading, molding, and loading stations,

3. Apparatus as defined in claim **2** including;

a plurality of core members mounted on said turntable and respectively advanceable thereby between said stations.

4. Apparatus as defined in claim **3** wherein:

said core members are spaced around the periphery of said turntable and capable of being respectively and simultaneously disposed at a respective one of the stations aforesaid.

5. Apparatus as defined in claim **1** wherein:

said plunger and core member at said molding station are co-axial and axially movable relative to each other to procure clamping of the conductors and contacts between them effecting and maintaining penetration of said contacts points in said conductors as aforesaid pending completion of the molding cycle.

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